

CLEAN VERSION OF ALL PENDING CLAIMS

February 20, 2003

IN THE CLAIMS:

Please amend claims 1, 11-13, 18, and 19.

Please add new claims 20 and 21.

- C1
1. (Three Times Amended) A method for winding
a stator of a brushless direct current motor having a stator
body with a pre-determined number of wound stator teeth,
wherein the stator teeth are respectively wound with two
5 coils which are magnetically coupled and which permit the
generation of opposite magnetic fields by the supply of
current with variable directional orientation, and wherein
each of the two coils comprises a predetermined number of
conductors, the method comprising the steps of:
- 10 a) simultaneously winding each of the stator
teeth in several partial winding steps, with an even number
of $2n$ conductors allocating a first set of n conductors of
the $2n$ conductors to a first coil and allocating the other
set of n conductors of the $2n$ conductors to the other coil;
- 15 and,
- b) repeating step a) until the predetermined
number of conductors per coil has been reached.

- C2
11. (Amended) A coil winding method for winding
a predetermined number of conductors to form a set of
magnetically coupled coil pairs on a plurality of stator
teeth of a stator body in a motor, each set of coil pairs
5 generating opposing magnetic fields in the plurality of
stator teeth, the coil winding method comprising the steps
of:

a) in a first partial coil winding step,
simultaneously winding $2n$ conductors together onto a first

10 plurality of stator teeth of said stator body;

b) selecting a first group n_1 of said $2n$ conductors and assigning the first group n_1 to a first coil of said set of magnetically coupled coil pairs;

c) selecting a second group n_2 of said $2n$ 15 conductors and assigning the second group n_2 to a second coil of said set of magnetically coupled coil pairs; and,

d) repeating steps a) through c) until said predetermined number of conductors are wound onto said first plurality of stator teeth to form a first magnetically 20 coupled coil pair of said set of magnetically coupled coil pairs.

12. (Amended) The method according to claim 11 further including:

C2 winding said predetermined number of conductors on a second plurality of stator teeth of said stator body in 5 said motor to form a second magnetically coupled coil pair of said set of magnetically coupled coil pairs.

13. (Amended) The method according to claim 12 wherein the step of winding said predetermined number of conductors on said second plurality of stator teeth includes the steps of:

5 e) in a second partial coil winding step, simultaneously winding $2n$ conductors together onto a second plurality of stator teeth of said stator body;

f) selecting a third group n_3 of said $2n$ conductors and assigning the third group n_3 to a third coil 10 of said set of magnetically coupled coil pairs;

g) selecting a fourth group n_4 of said $2n$ conductors and assigning the fourth group n_4 to a fourth coil of said set of magnetically coupled coil pairs; and,

h) repeating steps e) through g) until said

C2
15 predetermined number of conductors are wound onto said second plurality of stator teeth to form said second magnetically coupled coil pair of said set of magnetically coupled coil pairs.

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15. The method according to claim 14 wherein:
the first partial coil winding step of simultaneously winding said $2n$ conductors onto said first plurality of stator teeth includes simultaneously winding
5 two conductors onto said first set of six stator teeth; and,
the second partial coil winding step of simultaneously winding said $2n$ conductors onto said second plurality of stator teeth includes simultaneously winding two conductors onto said second set of six stator teeth.

16. The method according to claim 11 wherein:
the step of assigning said first group n_1 of said $2n$ conductors includes, prior to performing each said at least one first partial winding step, connecting said first
5 group n_1 of said $2n$ conductors to a first electrical connection contact 15_I on said stator body; and,
the step of assigning said second group n_2 of said $2n$ conductors includes, prior to performing each said at least one first partial winding step, connecting said second
10 group n_2 of said $2n$ conductors to a second electrical connection contact 15_{II} on said stator body.

17. The method according to claim 16 wherein:
the step of assigning said first group n_1 of said $2n$ conductors further includes, after performing said each at least one first partial winding step, connecting said
5 first group n_1 of said $2n$ conductors to a third electrical connection contact 15_{III} on said stator body; and,
the step of assigning said second group n_1 of said

2n conductors further includes, after performing said each at least one first partial winding step, connecting said
10 second group n_2 of said 2n conductors to a fourth electrical connection contact 15_{IV} on said stator body.

18. (Amended) A stator having a stator body defining a plurality of stator teeth carrying conductors to form a set of magnetically coupled coil pairs, the conductors being wound onto said stator teeth by:

5 a) in a first partial coil winding step, simultaneously winding 2n conductors together onto a first plurality of stator teeth of said stator body;

c³ b) selecting a first group n_1 of said 2n conductors and assigning the first group n_1 to a first coil
10 of said set of magnetically coupled coil pairs;

c) selecting a second group n_2 of said 2n conductors and assigning the second group n_2 to a second coil of said set of magnetically coupled coil pairs; and,

d) repeating steps a) through c) until said
15 predetermined number of conductors are wound onto said first plurality of stator teeth to form a first magnetically coupled coil pair of said set of magnetically coupled coil pairs.

19. (Amended) A stator having a stator body defining a plurality of stator teeth carrying conductors to form sets of magnetically coupled coil pairs, the conductors being wound onto said stator teeth by:

5 a) in a first partial coil winding step, simultaneously winding a first pair of conductors together onto a first plurality of stator teeth of said stator body;

b) selecting a first group n_1 of said first pair of conductors and assigning the first group n_1 to a first
10 coil of said set of magnetically coupled coil pairs;

c) selecting a second group n_2 of said first pair of conductors and assigning the second group n_2 to a second coil of said set of magnetically coupled coil pairs;

d) repeating steps a) through c) until a
15 predetermined number of conductors are wound onto said first plurality of stator teeth to form a first magnetically coupled coil pair;

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20 e) in a second partial coil winding step, simultaneously winding a second pair of conductors together onto a second plurality of stator teeth of said stator body different from said first plurality of stator teeth;

f) selecting a third group n_3 of said second pair of conductors and assigning the third group n_3 to a third coil of said set of magnetically coupled coil pairs;

25 g) selecting a fourth group n_4 of said second pair of conductors and assigning the fourth group n_4 to a fourth coil of said set of magnetically coupled coil pairs;
and,

h) repeating steps e) through g) until a
30 predetermined number of conductors are wound onto said second plurality of stator teeth to form a second magnetically coupled coil pair.

Please add new claims 20 and 21.

20. (New) A coil winding method for winding a predetermined number of conductors to form a set of magnetically coupled coil pairs on a plurality of stator teeth of a stator body in a motor, each set of coil pairs
5 generating opposing magnetic fields in the plurality of stator teeth, the coil winding method comprising:

a) in a partial coil winding step, simultaneously winding $2n$ conductors together onto a first plurality of stator teeth of said stator body;

10 b) selecting a first group n_1 of said $2n$ conductors and assigning the first group n_1 to a first coil of said set of magnetically coupled coil pairs by, prior to performing said partial winding step, connecting said first group n_1 of said $2n$ conductors to a first electrical
15 connection contact on said stator body;

c) selecting a second group n_2 of said $2n$ conductors and assigning the second group n_2 to a second coil of said set of magnetically coupled coil pairs by, prior to performing said partial winding step, connecting said second
20 group n_2 of said $2n$ conductors to a second electrical connection contact on said stator body; and,

d) repeating steps a) through c) until said predetermined number of conductors are wound onto said first plurality of stator teeth to form a first magnetically
25 coupled coil pair of said set of magnetically coupled coil pairs.

21. (New) A coil winding method for winding a predetermined number of conductors to form a set of magnetically coupled coil pairs on a plurality of stator teeth of a stator body in a motor, each set of coil pairs
5 generating opposing magnetic fields in the plurality of

stator teeth, the coil winding method comprising:

- C4
- 10 a) in a first partial coil winding step, simultaneously winding a first pair of conductors together onto a first plurality of stator teeth of said stator body;
- b) selecting a first group n_1 of said first pair of conductors and assigning the first group n_1 to a first coil of said set of magnetically coupled coil pairs;
- c) selecting a second group n_2 of said first pair of conductors and assigning the second group n_2 to a second
15 coil of said set of magnetically coupled coil pairs;
- d) repeating steps a) through c) until said predetermined number of conductors are wound onto said first plurality of stator teeth to form a first magnetically coupled coil pair of said set of magnetically coupled coil
20 pairs;
- e) in a second partial coil winding step, simultaneously winding a second pair of conductors together onto a second plurality of stator teeth of said stator body different from said first plurality of stator teeth;
- 25 f) selecting a third group n_3 of said second pair of conductors and assigning the third group n_3 to a third coil of said set of magnetically coupled coil pairs;
- g) selecting a fourth group n_4 of said second pair of conductors and assigning the fourth group n_4 to a
30 fourth coil of said set of magnetically coupled coil pairs; and,
- h) repeating steps e) through g) until said predetermined number of conductors are wound onto said second plurality of stator teeth to form said second
35 magnetically coupled coil pair of said set of magnetically coupled coil pairs.
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